Sowing the Seeds of Success

How to Start and Sustain A Kids' Gardening Project in Your Community

by Marcia Eames-Sheavly and
the National Gardening Association

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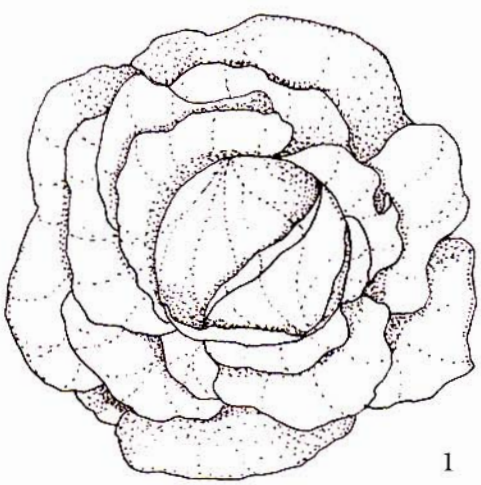


Preface

Gardening with children is a passion. It seems that new gardens are springing up everywhere, and for good reason. Kids' gardening projects are a highly visible way to beautify a community and inspire well-being among the many people who live, play, and work there. The bond between plants and people is a potent and historic one, destined to reconnect both the young and the young at heart to our environment. Whether we are striving to foster earth stewardship in school children, making literature come alive through an enchanting Peter Rabbit garden, or giving a facelift to an otherwise uninviting vacant lot, growing plants can be a powerful avenue through which we bring about positive change in children's surroundings, and in their lives.

The horticultural aspects of a gardening program deserve scrutiny—indeed, they are critical. And, the instructional components are plentiful and offer rich rewards for educators seeking hands-on, inquiry-based learning opportunities for their audience. But the "people part" is just as significant, and is often overlooked in the excitement of getting a gardening program off the ground.

This booklet is designed to walk you through the organizational aspects of a gardening program: the process of getting started and continuing, ensuring success each step of the way. Teachers, parents, community leaders, horticulturists, Master Gardeners, youth leaders, and other interested adults will find the process a useful tool. In fact, this same process can be useful for just about any community project.

The following people are gratefully acknowledged for their thorough reviews of this booklet: Charlie Mazza, Senior Extension Associate, Dept. of Floriculture and Ornamental Horticulture, Cornell University; Marvin Pritts, Professor, Dept. of Fruit and Vegetable Science, Cornell University; Doreen Greenstein, Senior Extension Associate, Agricultural and Biological Engineering, Cornell University; Raylene Ludgate, Program Coordinator, Cornell Plantations, Cornell University; Dave Hillmann, Extension Educator, Cooperative Extension Association of Albany County, Albany, NY; Jane Taylor, former curator and founder of the 4-H Children's Garden, Michigan State University; Rachel Dickinson, freelance writer.

Marcia Eames-Sheavly is a horticulture educator at Cornell University, where she is involved in outreach program planning, development, and evaluation. She is also a watercolor artist, and in her spare time enjoys gardening with her husband and two children in central New York.

Why Garden with Children?

Before beginning any new project, you often have to convince administrators that it will be a worthwhile effort. Depending on your approach, you may be able to satisfy a number of educational, community, and developmental needs. Here are some of the benefits:

- Generate pride among community members
- Instill a sense of ownership, pride, and responsibility among students
- Enhance the appearance, image, and popularity of a school or organization
- Improve the behavior and attitude of young people
- Provide a wholesome activity that keeps all kids engaged
- Connect children to the source of their food
- Heighten children's environmental awareness and promote earth stewardship
- Improve the quality of the curriculum, providing for more effective teaching
- Make valuable connections between disciplines or subject matter areas such as science, math, and social studies
- Foster science literacy

Where Did the Idea Come From?

At the science museum, did the staff agree that a garden would make a dynamic, hands-on exhibit, based on comments by visitors and support from volunteers—or did the director, an enthusiastic gardener herself, make a spontaneous decision that the staff should put in a garden? Were most of the teachers in the school eager to utilize a garden because of its opportunities for interdisciplinary education—or did one teacher decide, on a whim, that it would be nice to put in a planting that weekend? And at the cooperative extension office, did the extension educators and their Master Gardener volunteers determine that a garden would make an excellent outdoor learning facility, based on community demand—or did the county coordinator ask the staff to put in a garden because it would be good public relations?

Many times, out of eagerness to share a love for gardening with others, people jump ahead without advance planning. A broad base of interest is critical to the long-term health of the program (see The Importance of Ownership, page 11). In fact, imposing a program on anyone can dull the excitement of the effort, even if the participants might actually enjoy gardening in the long run. So before the project begins, are the participants interested? Do they want a gardening program?

This is not to say that one should not begin if all the participants are not on board. Perhaps a key group—a classroom in a school, or several 4-H members in a county extension association—has initiated the idea. If this is the case, there are many ways to put out feelers to measure the

Doing to, doing for, doing with

There are three approaches to implementing community projects. Here is one tactic: An agency feels that a gardening program is needed by the community, and goes ahead and implements it without community support. Essentially they "do the gardening project *to*" the community. This approach often has a "top-down" flavor.

Other well-meaning agencies may sense that there is a demonstrated need, so they do the gardening project *for* the community. But, without a broad base of involvement, these projects may fall by the wayside for lack of long-term support.

The best approach is to collaborate in each phase of the project — to do it *with* the community. Community members engaged in each phase of the project are much more likely to feel committed over the long haul.

enthusiasm and commitment of others. In a school, one might want to bring up the idea at a PTA meeting to see if parents are willing to volunteer their labor to make the dream a reality. Simultaneously, a teacher might poll other teachers at the next faculty meeting to determine who would be interested in utilizing a school garden. Someone should also speak with the principal and groundskeeper, and may want to attend a school board meeting to gain assurance that this type of project would have the board's blessings. Of course, at these meetings, a sign-up sheet should be readily available to secure names of individuals who would be willing to serve on a planning committee. A dedicated core group is necessary for each phase of the project.

Who Will Carry Out the Ideas?

Roles should be clearly defined before the spade ever meets the soil. Few youth garden projects function well without dedicated volunteers, staff, parents, teachers, or other educators working together with clearly defined roles. Ironing these out well in advance will save time, will ensure that the bases are covered, and will prevent tension that can come with wrongly made assumptions.

When the advisory/planning committee first gets together, distribute a tight agenda, and stick to it. At this initial meeting, iron out the project objectives, so that everyone agrees on the goals. Clearly define everyone's roles at this meeting as well. If the gardening program will be large, form subcommittees to tackle portions of the project. This will help to keep the meetings focused, and will demand less time of each individual in the long run, since long-winded meetings covering each aspect of the project will be avoided.

Do not be dissuaded just because your organization lacks the people to cover all aspects of the program. After all, is there any one group that can do it all? More importantly, would the program benefit from a "one-man band" anyway? If your program lacks diversity, partnerships will strengthen the program. In fact, partnerships will even enhance the agency that does have the skills at hand. Just be sure that it is clear what is expected of whom before the project begins, and that all parties have agreed to hold up their end of the bargain.

Look around: who can be approached to help make the dream a reality? Include enough people to broaden the base without making the gardening program into a circus where people are falling over each other. In each of the above scenarios, a diverse, yet focused group of dedicated individuals makes a commitment to cooperating with one another for the benefit of the participants.

Points to ponder

- Is a cooperative extension educator's role in a youth garden program to coach, encourage, and involve the participants, or to carry out the nuts and bolts of the project? Depending on where the garden is located — at the extension office, a school, or a local library — might there be tremendous variations in this role?
- An activities director in a summer day camp might be very willing to do garden-based activities with campers, and to even incorporate aspects of garden maintenance into his or her daily schedule, but who will help design the project with the participants in mind? Who will fund it?
- As a teacher, you can see the educational benefits for your students, and you are eager to utilize the garden daily for hands-on learning, but who will maintain the garden? Who is going to be responsible for raising money for new plants each year? How does the groundskeeper feel about the project?

Work with others

- Who are your obvious partners?
- Working with others strengthens your project
- Draw from a broad base!

The Partnership Approach

A gardening project is your golden opportunity to get to know and work with others in the community. Consider the following scenarios. In each case, the individual is aware of existing weaknesses, but turns these into strengths by rallying others in the community. The program often has many more interesting "layers" as a result.

School–PTA–Historical Society Partnership

You are a school teacher with a full agenda and limited time. After you interest other teachers and the principal in the gardening project, you approach the PTA and the local historical society for their support. The historical society will help, if you are willing to plant heirloom flowers and vegetables. The PTA is pleased, because the city's bicentennial is approaching, and they've been looking for a topic to delve into, so they choose the theme of horticulture, and will gladly help if they can use the garden as the focus of their bicentennial activities. You will tie the heirloom connection back to a social studies unit, which works well for you, too.

Museum–Day Care–Native American Partnership

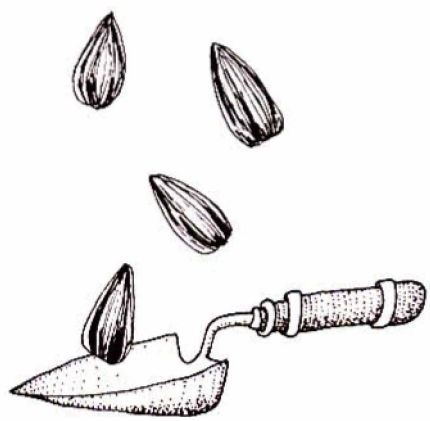
You are a museum educator seeking a creative outdoor display. You decide to put in a "Three Sisters" garden of corn, beans, and squash as a way for your clientele to learn more about native people in a culturally sensitive manner. You enlist the help of preschoolers from a day-care center to plant in late spring. Later, you invite them back for a fall harvest celebration, at which a member of a local Indian Nation has generously agreed to come and provide some Iroquois stories. You gain from having the new exhibit and the extra help. The director of the day-care center is thrilled to have a meaningful way to expose her children to native culture; she offers to partner with you on another project. The kids enjoy getting their hands dirty, and meeting the storyteller. The storyteller is pleased to have the opportunity to share her art. She is also gratified that you have chosen to focus on the present, not just the past, with respect to Iroquois people, and the two of you look for ways to work together in the future. All this from planting a small garden.

Alternative School–Garden Center–Cooperative Extension–Master Gardener Partnership

You are a counselor in an alternative school and you have never gardened, but you have heard of the positive results of gardening programs, particularly in this environment. After reading everything you can get your hands on, you call a meeting with another school counselor, a local garden center owner, a cooperative extension educator, and two Master Gardeners. Although you are bursting with ideas, you all agree that it will be important to start the first year with a small group of motivated teenagers. The garden center will supply some vegetable plants, the extension educator will help you design a small garden and the activities, and the other counselor will work closely with you in each initial session. The Master Gardeners will visit for two of the later sessions, and will assist the teens when they take produce to the county fair for judging. The other school counselor agrees to be the liaison between the administration and the project, while you focus more on the youth. You eagerly anticipate having these young people putting their produce on public display.

Generating Administrative Support

Convincing administrators may be quite easy, or very difficult, depending on their philosophical approach to outdoor learning. Some administrators see this type of project as critical, and immediately recognize all



Before going further, have you:

Ensured that there is demonstrated interest in the project?

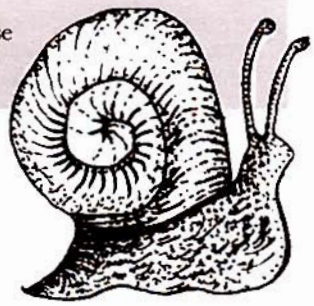
- Secured permission to carry out the garden program?
- Identified a core, committed advisory/planning group?
- Ensured community-based representation in this group?

Defined roles: planning, maintenance, funding?

- Identified partners?

Questions to answer for your plan summary

- Why do you intend to begin this program?
- What are your goals and objectives?
- How do you plan to evaluate your effectiveness?
- Who is providing the leadership?
- Who will be on the planning committee?
- How do you intend to involve children?
- What are your requirements for space?
- What is the length of the program?
- Roughly how much money is required? How do you intend to raise funds?



the benefits listed on page 3. Others may view a growing project as unnecessary, as an "add-on," or even as a liability issue. Whatever their perspective, it is critical to involve administrators early on, and to keep them informed of your progress. It is even more critical if they do not fully support the program initially.

Be prepared. You may want to present a one-page summary of your plan (see box at left). A thorough approach will be the first step to persuading a hesitant director of the program's validity.

Managing Volunteers

Every gardening project requires committed volunteers. Volunteers often join because they care about the project and its participants. They may want to be more involved in their communities, meet new people, and "make a difference." Perhaps they become involved because their children are in the program, or they want to be associated with a worthy community effort. Before you can effectively manage volunteers, it helps to know their motives, in order to sustain a fruitful relationship that builds your program while meeting their needs as well.

Whatever their reasons for becoming involved, the following are the major components to ensure success with volunteers, as identified by the National 4-H Foundation. Before embarking on any program requiring significant volunteer management, address each of the following points:

- Identify and recruit people with the competence and attitudes essential to accomplishing the goals of the program
- Select and place volunteers in roles that meet their needs, and yours
- Orient volunteers to the goals of the project and the role that they will play
- Train volunteers in the specific skills, knowledge, and attitudes necessary for them to successfully accomplish their tasks
- Utilize volunteers' time and skills effectively
- Recognize and appreciate volunteers' contributions
- Evaluate volunteers' performance and provide useful feedback
- Supervise supportively, helping volunteers to reach desired goals

Size and Scale of the Project

Planning and Design

A garden program has several phases. After you garner support, get people excited about the prospects, and gather a planning committee of ardent volunteers, it will be time to begin the planning and design portion of the project. This is the fun part; the possibilities are truly endless. During this process, the planning committee will be constantly looking to the future, and assessing your group's commitment to the project, as well as the realistic expectations of implementation and maintenance.

Some garden projects are very small in size and scope. These can be compact, attractive, well-maintained gardens that serve a need. Although all the school curricula may not directly relate to the garden, a garden

still can enrich a curriculum within a grade level, and can offer several concrete activities for the students.

Other gardens are large in size and overall scope. One school in upstate New York restructured the K-6 curriculum around the school's garden program, and received major funding from a national corporation to overhaul its approach to computer technology, based on a garden-technology vision, which was conceptualized by the school's "dream team."

What Is Your Vision?

Whether your dreams are small or large, it pays to ***start off small the first year.*** Examine the overall vision of the gardening project, and choose one aspect that the planning committee can reasonably attain. It is much better to be wildly successful with a postage-stamp garden than to fail at a project so enormous in scope that it overwhelms everyone during the first go-round.

Conversely, if the ideas for the gardening program are initially quite simple, it may be advantageous for the planning committee to broaden its thinking, and attempt to incorporate a larger vision into the future of the program. What is the overall theme of the garden? If the gardening program flourishes, might there be opportunities for, and interest in, expansion? Try to paint a larger vision for the program, even if the garden itself will be diminutive. For example, a community group may plan a tiny garden outside the library, focused on a theme from a children's book. How might this theme change next year? If it works well, can more themes be added? Can a portion of the garden geared more for adults be incorporated, as well? Even if the group is reticent about tackling too much, it is healthy to explore long-term possibilities.

Whatever the planning committee chooses to do the first year, be sure to set up a meeting with the groundskeeper, custodian, or other individual who oversees the grounds. Gaining this person's trust, and opening lines of communication, should occur as soon as the committee can articulate what the garden might look like. Invite this person to comment on the design, and ask if mowing in the areas adjacent to the garden will be affected by the plan. Is there a better location, or slight adjustment that needs to be made? Find out in advance.

Before going further, have you:

- Spoken with administrators?
- Looked into insurance matters?
- Looked for an adequate site?
- Consulted resources for ideas about the best type of garden design?
- Looked into accessibility issues for children with special needs?
- Considered a solid activity program appropriate for children? (Weeding and watering does not constitute an activity program.)

Criteria for a good garden site:

- Well-drained soil, free of heavy metals such as lead
- Full sun and protection from wind
- Proximity to a water source
- Nearness to classrooms or meeting place
- Storage space for tools and equipment
- Availability of additional space for composting, pathways, improvements, expansion
- Security from theft and vandalism (do people who could watch over the site live nearby?)

Also:

- Are there on-site materials that need to be removed, such as blacktop or debris?
- Is the site location safe for participants? (Will motion-sensor lights be needed, and can they be installed?)

Know Your Audience

Designing for Children

A children's garden should be designed for children. In the most practical way, it should suit their smaller stature. As an example, raised beds should be no more than 3 feet wide, benches and other seating should be sized appropriately, and garden maintenance should employ youth-sized tools (if any). If the planning committee is truly sensitive to this youthful audience, it should design garden themes that pique the interests of children, preferably suited to their penchant for fantasy, or adapted to familiar themes, such as a Peter Rabbit or an alphabet garden. Stepping stones that lead them into areas of the garden work well; do not assume they will "stay out of the garden"—they will not, and you should not want them to. Rather, incor-

A few themes with child appeal

- Pizza garden
- Teeny-tiny and giant garden
- A to Z flower garden
- Children's literature themes (Beatrix Potter garden)
- House of sunflowers
- Sundial garden
- Pond garden
- Butterfly garden
- Garden of primary colors

porate clearly defined areas where they can get close to plants.

There are endless numbers of fun elements to add: brightly colored structures; scarecrows; interesting seating elements; painted stumps; sculpture made by the children; and brightly colored tiles that have been fired by the students are just a few. Height can be added with beanpole teepees, arches, pergolas, and even treehouses or gazebos. Young children enjoy vibrant color, like to be immersed in flowers, and enjoy having suitable places to hide, such as beanpole teepees. Avoid "no's:" (no picking flowers, no walking on the mulch, no picking up stones, no playing in the water). Key words related to planning for kids: multi-sensory; gross motor activity; vivid color; safety; eating and tasting opportunities; interactive; interesting surfaces, such as sand and water; and attention grabbers.

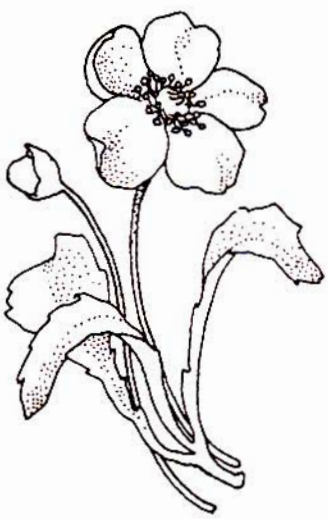
Making Your Site Accessible

Gardens should be designed so that they are accessible. "Accessible" has come to be synonymous with "accessible to wheelchairs," but it may also mean a garden designed with sensitivity to visual impairment, varying degrees of manual dexterity, or varying levels of emotional/mental functionality. Accessibility may require having wide, uncluttered paths with beds that are easy for everyone to reach, or it may suggest that plants are accessible—again, having no "no" signs. It can also mean accessible to strollers. A garden that is too complicated, with plant species that are difficult to distinguish from one another, or cluttered with Latin names, may be inaccessible to children who are having a first experience with a garden. Often, accessibility boils down to "making everyone welcome." Consider the abilities of volunteers as well as participants, particularly if the volunteers include older adults.

A Word About Raised Beds

Raised beds are neat, clean, easy to maintain, and if they are of an appropriate width (not more than 3 feet) they can be easy for children to work in. However, a word of caution is necessary. Jane Taylor, founder of the Michigan 4-H Children's Garden, warns that, "Most folks tend to slam-dunk rectangular raised beds in row by dull row." She suggests a wheel-shaped arrangement, so that the center can become a location for a gazebo, or a few tables and benches for community sharing. This type of design is more friendly, and encourages the camaraderie desired for gardeners of all ages. She suggests that the ends of the beds be blunt, for safety reasons. Ms. Taylor also urges people to find ways to get kids inside the beds, by cutting small holes in the timbers and using stepping stones, chunks of concrete, old boards, or bricks for paths.

Cedar is a long-lasting (if expensive) alternative for those with concerns about using pressure-treated lumber in raised beds.

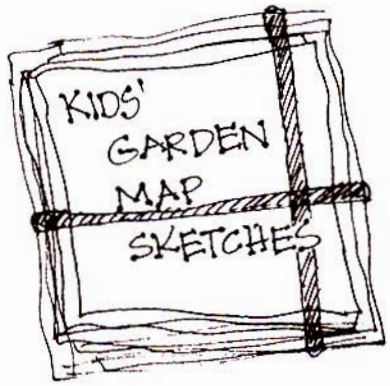


Programming for Older Youth

If middle- and high-school aged youth are the target audience, a garden that offers hands-on experiences in the plant sciences, and in the related fields of ecology, botany, plant pathology, and entomology, can be very rewarding. High school science teachers often feel that it is diffi-

cult to teach plant science because it is viewed by youth as less animated than animal science.

Composting is an appealing activity-based focus for older youth that also fosters environmental responsibility. Others may want to focus on a different type of stewardship—that of community service—by raising produce for soup kitchens and food pantries. One group of teenagers involved with the Broome County Cooperative Extension returned from a week among the homeless in Washington, D.C. to set up a gardening program to produce food for the hungry. Marketing programs are challenging, too, and can offer students a source of income, while giving them skills in horticulture, communication, and business management. In each of the above situations, gardening is combined with one or more disciplines to create a more ambitious experience for the older child.



Encourage Children's Participation

Having children involved in every project phase ensures that planning is on target, appropriate, sensitive to their needs, and interesting. Most often, adults plan, design, and implement the garden project, and then bring children in for the activities. This is a gross underutilization of children's talent and energy, and will likely result in a garden that, while functional, may not be as exciting.

In a revealing book entitled *Children's Participation: The Theory and Practice of Involving Young Citizens in Community Development and Environmental Care* (Earthscan, 1997), the author, Roger Hart, offers suggestions for involving children in community-based projects. A critical point he makes is to avoid efforts that "decorate" or "tokenize" children's connection to the project, since this does not represent true participation. An example of decoration is when children wear T-shirts promoting a garden program that they neither planned, nor designed, nor implemented. Token involvement is very common, and again, is not true participation. An example of this might be a school in which children are involved in a contest to name the garden, but do not have any input in its planning, design, or implementation. In Hart's eight-step "ladder of participation," he points the way to projects with increasing degrees of initiation by children, ranging from "assigned by adults but informed," all the way to "child-initiated projects in which children share decisions with adults."

You may also want to refer to the Dryden, NY, case study, Appendix A, as a practical example of how one school's change of approach enhanced the garden project.

Involve kids

- Involve children in garden planning, design, implementation, and maintenance
- Try to locate and read the book *Children's Participation*, mentioned at left (and in Appendix B)
- Spark children's interest in fundraising and future planning

Developing a Maintenance Plan

Looking Ahead

Talk to people who have implemented community or school gardens, and ask them what was the biggest setback in their program. Many will say that they did not anticipate the level of maintenance required. Starting small, having a number of committed volunteers, and being

very organized about the schedule for maintenance—who is responsible, and when—will minimize the demands.

While formulating a maintenance plan, look down the road. This critical foresight will be much appreciated by those who take ownership of the program later on. Look at the garden plan, and try to envision what the garden will look like in 5 or 10 years. What changes will have taken place in that time? What demands will these changes place on the caregivers? (Will the garden be in place that long?)

Questions to consider for a long-range maintenance plan

- Will the garden contain structures, such as an arbor, pergola, fencing, or bridges that may need additional attention years later?
- Will the raised beds, water feature, or pathways possibly require repair in the future?
- Who will plant, weed, water, and carry out the day-to-day maintenance?
- Are the same people involved now likely to be with the project in three years? For example, in a primary school, parents will move on with their children. How will you adjust your plans and be flexible in the future?

What about Summer Care?

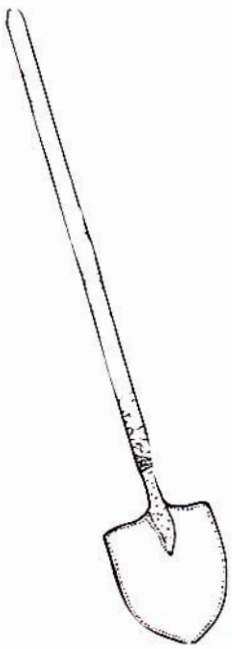
A commonly asked maintenance question is, "How do we utilize or maintain our school garden during the summer?" First, is a garden needed during the summer months? Some programs simply plant a spring garden that comes to fruition by the end of June. An alternative is to plant fall crops, such as pumpkin or winter squash, which require minimal maintenance over the summer.

Often, teachers will ask the custodian or groundskeeper to care for the garden over the summer, but that does not capitalize on building ownership (see page 11), and it might not be fair to the groundskeeper. Stories are told of situations in which the groundskeeper, out of frustration, "accidentally" leveled portions of the garden over the summer. So, alternative plans may work more smoothly. Of course, as a courtesy, let the groundskeeper know who will be on-site during the summer, regardless of what plan you choose.

The ideal summer program may be one in which the garden is well-maintained, is utilized for activities, and has solid leadership.

Many Hands Make Light Work!

One alternative is to ask the staff of a summer recreation program whether they would like to care for the garden, and simultaneously utilize it for activities.



Another approach is to put the garden up for "adoption." Take a master calendar to faculty, PTA, and other meetings and events, and ask individuals and families to sign up for a period of days or a week. What are the rules for adoption? They can vary according to the garden's requirements for maintenance, but the minimum is generally to show up daily and to be visible, especially in the evenings, so that the community (and potential vandals) can see that the garden is much loved and well cared for. Weeding and watering are other basic requirements. Some people also add deadheading, staking, removing spent stalks, etc. to the list. Let people know what is expected of them in advance, and indicate where the hose and tools will be stored.

A third approach is to form partnerships among agencies, such as school, cooperative extension service, youth bureau, and other community groups. For example, a group of 4-H clubs might be willing to care for a small school garden if they can use the garden for activities, utilize the produce, and display produce and flowers at a county fair. Look into the possibilities.

When it comes to maintenance, remember that frequent care is very manageable—much easier than attacking knee-high weeds only occasionally. As always, many hands make light work. Set up the schedule accordingly.

Keep Everyone in the Loop

Everyone has been exposed to organizations with rigid hierarchies, in which commands are dictated by one or a few in charge. This type of approach has no place in a grassroots gardening program. Although the importance of seeking approval from a director, principal, superintendent, coordinator, or other leader should not be de-emphasized, it is critical to make everyone welcome. For example, groundskeepers at many institutions are the ones most attuned to the landscape around the facility, yet these VIP's are often left out of the loop when it comes to the process of planning, designing, and implementing a garden project. Inform support staff, volunteers, assistants, and others who work behind the scenes of your intentions, and seek out their various viewpoints. Most of the common-sense solutions to daily questions and concerns will come from the people in the trenches.

Match the Person to the Job

Not everyone is skilled in working with people; not everyone sports a green thumb. If someone wants to help out and they are somewhat abrasive with people, but otherwise have a heart of gold, find a terrific portion of the project for them that does not involve much interaction with people. Perhaps this individual can assist with weekend maintenance, work on a newsletter, or do other activities that do not require interaction. Others may relish the idea of an active youth program, but know nothing about gardening. There is always help needed with coordinating volunteer schedules, constructing beds, making signs, setting up activities for participants, providing refreshments during the biggest events, writing thank-you notes, fundraising, and so forth. There is plenty for everyone—so line up the right job for the right person.

Before going further, have you:

- Evaluated the need for/taken steps to organize a volunteer program?
- Included children in each phase of the process?
- Developed a good garden design?
- Developed a maintenance plan?
- Addressed accessibility?
- Welcomed interested individuals to the project?

The Importance of Ownership

What Did They Do Wrong?

Imagine this planting day scenario: The planning committee has carefully thought out the school garden program and designed a beautiful plan. Each step of the way, they've included the participants and other partners, and have worked hard to be sensitive to the particular needs of the students and teachers. Now, it's time to build the raised beds. Four planning committee members work from dawn to dusk on Saturday to get them built and filled with soil. So why are they disheartened when Monday arrives and no one even notices the new beds? What did they do wrong? And, the groundskeeper has the nerve to grumble about the "dirt" they have spilled across the parking lot. They all have a lousy day, feeling unappreciated and resentful.

Involve everyone

- Involving participants each step of the way creates a sense of ownership
- People value what they own!
- If many people "own" a garden, it is less likely to be vandalized

People Value What They Own

Now, imagine this scene instead: Several weeks before that same Saturday, the committee begins to get people psyched up for the big "bed-building." A newspaper article appears, talking about how the school children are going to be "making their beds," and welcoming the community to join them. The committee invites the primary school children to come to the bed-building with their parents, and requests that people bring along their garden tools and sandwiches. They encourage the community service groups and garden clubs to join them in the excitement as well. Friday comes, and the planning committee carefully marks out the garden design with a large bag of white flour, and crosses their fingers that it doesn't rain. Saturday arrives. The local donut shops have donated all their day-old donuts to the cause, and PTA members fix coffee and juice in the cafeteria, bringing trays of donuts and drinks out to the workers.

While one group mixes topsoil, compost, fertilizer, and lime in a large pile, others remove sod in the whimsical, curvy design that the children developed. They carefully edge the beds, and get the stepping stones ready. Another group is building a small archway. Children are racing around from the bed-building to the playground nearby. The groundskeeper and principal are working alongside the parents and the teachers. When the soil mix is ready, and the sod has been stripped, it would be easy to dump the topsoil/compost in the beds with a few wheelbarrows—but instead, the committee has arranged in advance to have about 75 buckets at hand, so everyone lines up in a "Bucket Brigade." The buckets are filled with topsoil, and passed down the line until the new beds are heaped with the healthy mix. Others stand by to work the topsoil mix into the new beds.

The local television crew films this event for the six o'clock evening news (which, of course, the whole community will eagerly watch). Afterward, everyone helps clean up. A volunteer sends thank you's to each organization that helped out, and puts a big THANK YOU in the school newsletter.

Things to think about

- In which scenario do more people have a sense of ownership?
- In which will the children feel that the garden is theirs?
- Which will have an easier time getting people to help with summer maintenance?
- Which will local businesses want to donate to?
- Which has a lesser chance of being vandalized?

Every step of the way, think of ways to instill ownership. Passing plants and stakes down the line, inviting people to harvest parties, keeping the gardening program highly visible, and otherwise involving people at each step enhances the sense that the garden belongs to the participants.

The only challenging part is to step back and allow some of the "control" to shift from the planning committee to the participants!

The Importance of Identity

It would be a pity to go so far in a program only to wind up referring to it as the "Library Garden," the "Youth Garden," or the "School Garden." Names spark zest, and even impart meaning. "Habitat Discovery" or "Salsa" gardens feel decidedly different from "Ladybug Land." By the same token, which would volunteers rather join: the "Garden Committee" or the "Green Team"? Holding a "garden-naming" contest can generate excitement, as well as community pride. Remind contestants of program goals, and encourage them to subtly weave the primary objectives of the garden into the title. Short, easy-to-pronounce names tend to be more memorable.

This contest offers yet another opportunity to develop a sense of ownership. Names can even change the flavor of a project. Michigan State's 4-H Children's Garden could have had a "Grain Garden," but instead opted for a "Cereal Bowl." It is much more creative, appealing, and descriptive, and paints a picture of how the garden might look.

Name your project

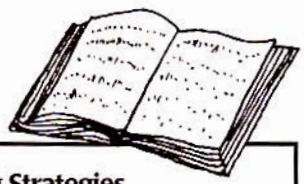
- Creative names can go a long way in capturing community spirit and creating excitement
- Names can completely change aspects of a project

Fundraising

Developing a Plan

Fundraising is often a critical step in setting up a garden program. Many times, there simply is no spare money available in the budget; unfortunately, gardens are often considered "extras," and until that changes, fundraising will remain a fact of life. Raising funds will go more smoothly if you involve dynamic individuals with an interest in fundraising, so think of this as—again—one more opportunity to develop a strong sense of ownership in the community.

There are several approaches to fundraising, and a successful program frequently incorporates more than one strategy. One tactic is grassroots fundraising—methods of generating income that can take a lot of time and energy for the dollar, but also involve many people and create ownership. Selling candy bars, seeds, or vegetable transplants; holding bake sales, car washes, chicken barbecues, and benefit concerts; setting up rollerskating parties; bringing the circus to town; having "dollar drives;" and other community events and projects all serve a larger purpose: to involve people in the project, to make them feel great for donating small amounts of money to the cause, and eventually, to raise sufficient funds. Community spirit is inspired by working together toward a common goal. For this reason, consider carrying out some of the above examples, or variations of them, even if they require some additional time to plan and implement.



Fundraising Strategies

- Make it easy for everyone to give
- Think of ways to secure larger sources of funding as well
- Be specific as to your needs
- Never underestimate who might be in your audience; whether meeting at the Rotary Club, presenting to the Board of Directors, visiting with garden club members, or volunteering at a local school, make a pitch for your project!

Approaching Local Businesses

Approaching area businesses for donations of money or materials can be a boon to a gardening project, but being professional and organized is critical. Businesses are "hit up" for donations all the time. Be specific as to what is needed, and ask only for appropriate amounts of materials. Take along a project folder (see box, page 14) to leave with each business. Most organizations keep attractive folders for fundraising. They

The project folder should include:

- An enthusiastic endorsement letter from the director, principal, or coordinator, stating that the gardening project is superb, is well organized, and has his or her full support
- One-page project description
- List of people (which will grow) who are supporting the project
- List of specific needs
- Garden plan
- Quotes and/or drawings by participants
- Other appropriate inserts

need not be slick to be effective. Having a project folder in hand will also give the individual approaching the business some confidence. If the contact person is busy, leave the folder and follow up later; if he or she has the time, go through highlights of the folder. Either way, the business will see that this effort is well organized; that steps have been taken to ensure that the program has the full support of the agency represented; and that the business owner's schedule is respected.

This is yet another opportunity for children's participation. In addition to the token involvement of having them develop a decorative cover, seek their input as to which inserts they feel are needed.

Know your organization's tax status before requesting donations, since donors will need to be aware of this. Know what name the business should make the check out to. Money may be the first need that comes to mind, but other gifts are just as valuable. You may want to solicit: gifts and grants; matching gifts; released staff time for employees who wish to participate; in-kind gifts (use of equipment, printing); donations (high-quality plant material, lumber, soil amendments, fencing, tools).

If You Write Grants

Grants offer another way to secure financial and material support for program development. Listed in Appendix C are some agencies that have supported gardening programs. Local foundations may be the best bet. Do some research into the background of the granting agency or foundation. Ask others to look over the proposal. Follow the unwritten rules of grant seeking (see box, left). The proposal will need to convey excitement and enthusiasm, while at the same time stressing the excellent organization and broad base of the gardening program. Most foundations are not interested in funding a short-term affair. It is likely that you will be asked for documentation of strong leadership, community support, and the sustainability of your program. Working through the process of proposal writing can help the planning committee view the program differently and identify strengths and weaknesses—a healthy process for any program. If the questions in the foundation guidelines make it clear that the program is weak in some areas, do not be discouraged. Play up the strengths and clearly state the measures the committee is taking to enhance other areas of the project.

The unwritten rules of grant seeking

- Make requests as short as possible. Remember that real people have to read through all those proposals. So, be concise.
- Make the request simple and straightforward. Do not assume complexity adds credibility. The more complex the proposal, the more the trustees might debate it. Simple requests tend to be debated less and approved quickly.
- Give the foundation everything it asks for the first time. Do not make them track you down for letters of approval and support, and other addenda.
- Show appreciation when your organization receives a grant!
- Know when to quit. If rejected, it is appropriate to ask for reasons why, but do it in a way that leaves a good impression.
- Be a good loser. Do not ever argue with a foundation representative. Try again with another project, another time.

—Nonprofit World, *Vol. 5, No. 2, pp. 20-21.*

What to Avoid When Writing a Grant Proposal

- Acronyms and professional jargon (an irritation, because it is likely the person reviewing the proposal is unfamiliar with the abbreviations used daily by your organization)
- Small type or hard-to-read font
- Large, cumbersome proposals held together with a rubber band or paper clip
- Irrelevant appendix material (the less included, the more likely it is to get read)
- Complex proposals with many parts

Sometimes grassroots efforts are so uncomplicated that the proposal writer feels compelled to pepper it with lofty, complex words and ideas.

However, a brief, clearly outlined, straightforward proposal describing a similarly well-defined program is the way to go.

Share Your Program with the Community

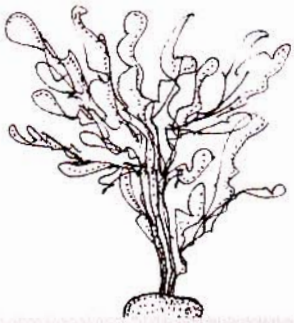
Whenever possible, reach out and share the garden program with the community. It is a waste of energy to go through the effort of building a solid community base, only to "let the ball drop" when the plants are in the ground. Because of the nature of gardening, it really is easy to remind people that the program is alive and well. Send a thoughtful bouquet to the new business in town, to the foyer of the nursing home, or to the Chamber of Commerce. Offer to take a tray of bite-sized fresh vegetables to a community event, and work with children to help prepare it. A meaningful way of reminding people of the gardening program is to plant extra plants for the hungry, and donate to the local soup kitchen or food pantry. The participants might even prepare a meal from the produce they have grown, or festoon the tables with their flowers. Never provide blimp-sized zucchinis, wooden carrots, or tired lettuce. Anything that leaves the garden and travels into the community is representing your organization and should be top-notch.

Show Your Appreciation

When all is said and done, there are probably a large number of people who have contributed to the success of the program. Never be miserly with gratitude. The planning committee may want to designate one individual to send thank-you notes to each person who has donated to, volunteered for, or otherwise shown support for the program. If the numbers are large and this is difficult, hold an event, such as a gardening lecture or workshop, and open it to all who are interested as a way of providing a public thank you. Be sure to invite all your benefactors.

Growing Your Community

Developing a gardening project is terrific for building a sense of fellowship, fostering collaborative partnerships, and creating a meaningful program for public well-being. It doesn't need to end with the garden. Most of the concepts in this booklet can help to sow the seeds of success for just about any community effort. Perhaps your community is planning a harvest event; engaging in a beautification project; putting together a reading program at the local library; or setting up a series of activities for young people through a community center. As you walk through the manuscript, you will see that, although the examples may be quite different, the suggestions for organizing, building ownership, creating identity, and generating volunteer support are the same. Employ these practices in other projects, and share ideas with friends and community members engaged in other activities. Gardening is good for people. It beautifies, strengthens, and revitalizes. But, it might just be a beginning, a model for something new and exciting in your community.



Before going further, have you:

- Taken steps to create ownership?
- Enlivened your project with a creative name?
- Developed plans for fundraising?

Ways to share your program and show appreciation

- Donate produce to the local food pantry or soup kitchen
- Take flowers to nursing homes, libraries, and other community centers
- Offer to set up an exhibit in a high-profile location such as a community center or bank, describing how the planning committee set up the program, and the exciting things that are happening there now.
- Provide refreshments for hard-working volunteers
- Remember that letters of thanks that include quotes from the participants are especially thoughtful
- Be sure to thank foundations and corporate supporters immediately
- Hold a special harvest dinner for volunteers and donors
- As your project grows, keep supporters updated with a gardening program newsletter

Appendix A: A Case Study: The Dryden Elementary School "Living Courtyard"

In an unusual and exciting partnership, Dryden Elementary School students worked with university landscape architecture students to design a learning landscape for educational enrichment and play enhancement. This "Living Courtyard" is located on the school grounds, adjacent to a new library/media center. The design process engaged many youth in the school, creating a powerful sense of ownership and excitement among students, teachers, and community members.

Background

The Dryden Elementary School in Dryden, NY, draws nearly 1,000 students from one of the widest geographical school districts in the state. It is divided into primary (K-3) and intermediate (4-6) with separate principals. The Dryden School District population is very diverse economically and socially, including significant populations of rural low-income families and highly educated upper- to middle-income families. The school serves a notable number (11.5%) of children with disabilities and special needs. The large size of the school, its geographically dispersed population, and its social diversity have combined to make it challenging to create a sense of school "community."

In 1996, the primary site-based team worked with teachers, students, parents, and community members to design and implement a school garden. This effort served to unite school and community, and provided an exciting avenue through which special needs and other students in K-3 classes could work side-by-side to plant and care for the garden, enjoy its beauty, and use the garden as an interdisciplinary springboard for inquiry-based learning. Throughout the year, the garden was very well managed and cared for, due in large part to the extensive, year-long planning process that preceded the implementation of the garden.

Because of the success of the garden, a garden care committee, called the "Green Team," was formed as a subcommittee of the PTA. In 1997, The Green Team, along with others in the school community, expanded the garden to include a new 16- by 16-foot deck, new beds, and enhancements such as tables, tree trunk seats, and hanging plants.

Planning for a Living Courtyard

The Green Team's effort was well received, so the school community was again prepared to take on a larger-scale project. In reviewing the progress thus far, the Green Team identified two areas that needed to be strengthened. First, in the existing garden project, the primary school was solely involved; the intermediate school teachers expressed the desire to become active. It was felt that the next step should be a more challenging project that would include both schools. In addition, children had benefited from the garden, but had not participated in the design phase of any part of the schoolyard. This was a concern, since research has shown that children's appreciation for, and understanding

of, any project is greatly enhanced when they are directly involved in each project phase.

Teachers and parents from both schools met in the fall of 1997 to discuss which area of the school grounds could offer the most opportunities for educational enhancement. It was unanimous that a location known as the "Blacktop" was in desperate need of attention. The Dryden School had an 80- by 90-foot courtyard area, enclosed on three sides, which was entirely paved with asphalt. Teachers expressed concern about the noise level in classrooms adjacent to this "Blacktop," the excess heat generated in warm months, and the safety of the students playing there. Wild games of "wall ball" and other extremely active, noisy games had dominated this alternative play area. In warmer months, in addition to noise, dust from rough play entered the classrooms. And of course, given the enclosed atmosphere of the courtyard and its proximity to a new library and media center, it had been viewed as an underutilized opportunity for curriculum enrichment and outdoor learning.

Developing an Exciting Partnership

At the time this area was being considered, a parent in the school was asked to supervise four university landscape architecture students. These students needed to collaborate with a school to design a learning landscape as a requirement for a 5-credit 1998 spring semester community design course. The parent brought the university students to Dryden Elementary, where they were introduced to the school's enrichment teacher. An exciting partnership was born.

In January of 1998, parents, teachers, the enrichment teacher, and the university students met. The goal was to discuss a strategy for designing a learning landscape for the "Blacktop" that would benefit all the elementary school children. All felt that it would be the most potent educational experience to have Dryden and university students work together to design a landscape, without the assistance of parents and teachers. Unlike any other school project, this design would come about exclusively from this university student–elementary student interaction. The enrichment teacher set up a schedule whereby landscape architecture students and Dryden third and fifth graders could get together on a regular basis, and then stepped back.

Reaping Success

By March, the results had exceeded all expectations. Dryden students surprised teachers and parents by becoming very serious-minded about the project. They looked forward to each meeting with the landscape architecture students, and worked hard with them. Without adult intervention, they identified the need for a quiet extension of the new library/media center, and came up with features of a park-like setting, such as trees, benches, and winding paths. They even suggested playful literature-based themes, and were unexpectedly in complete agreement about the "mood" of the landscape (some adults anticipated wildly disparate results). These students recognized that they used much of the school grounds for gross motor play, and wanted one area that would be used entirely for outdoor learning, particularly reading. The university

students helped shape their thoughts into a practical, workable design.

This design-in-progress is a whimsical, child-oriented, education-rich landscape that, if fully implemented, could benefit the Dryden community for many years to come. But, like many exciting projects, it carries a steeper price tag than anticipated. The students have raised funds, and the Green Team is holding circuses, and roller-skating parties, as well as seeking grants, to cover the costs. In addition, the school is considering a three- or four-step plan to implement the design in phases. When the time comes for implementation, the Dryden students who worked hard at the design—and their school community—will no doubt feel a tremendous sense of satisfaction.

Appendix B: Bibliography

This bibliography presents the breadth of resources available to those interested in the creative educational development of school grounds. It is not a complete listing; rather, it is a potpourri of many different types of resources, most very practical in nature, that could be helpful to the practitioner—the teacher, administrator, community educator or organizer, parent, or volunteer.

Items marked with a square bullet (■) are available through the National Gardening Association.

Books and Other Publications

■ **Adil, Janeen R. 1994. *Accessible Gardening for People with Physical Disabilities: A Guide to Methods, Tools, and Plants.* Bethesda, MD: Woodbine House.**

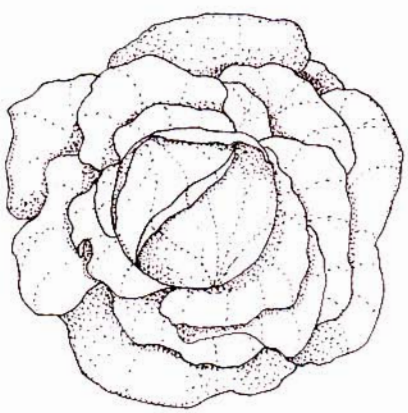
Written by the parent of a child with a physical disability, this book is a thorough and practical resource for designing, planting, and maintaining a garden for individuals with special needs. It also addresses how to make an existing garden more accessible.

• **Bales, Suzanne Frutig. 1996. *Ready, Set, Grow!: A Guide to Gardening With Children.* New York, NY: Macmillan.**

Photos and description of the Michigan 4-H Children's Garden.

■ **Beaty, Seddon Kelly and Irene Fountas. 1993. *Butterflies Abound!: A Whole Language Resource Guide for K-4.* Menlo Park, CA: Addison Wesley Longman.**

A rich collection of butterfly-based teaching ideas, including meaningful activities in science, language arts, math, social studies, and the arts. An annotated bibliography describes poetry, field guides, fiction, music, and more.



• **Brennan, Georgeanne and Ethel Brennan. 1997. *The Children's Kitchen Garden: A Book of Gardening, Cooking and Learning.* Berkeley, CA: Ten Speed Press.**

Introduces the garden project of the East Bay French-American School, which is part of the school's curriculum with a focus on environmentally sound principles and development of the senses through gardening, cooking, and eating. A guide and inspiration for parents and teachers. Includes chapters on starting and maintaining a garden for teaching children; creating an herb garden; and recipes from four seasonal gardens.

• **Caduto, Michael J. and Joseph Bruchac. 1997. *Keepers of the Earth: Native American Stories and Environmental Activities for Children.* Golden, CO: Fulcrum Publishing.**

Part I of this book offers thoughts and suggestions for facilitating the use of native stories and activities. Part II uses stories to introduce the subjects explored in the activities. Relevant questions bridge the stories and the activities. Strong earth stewardship and sensory earth awareness focus.

■ **Cohen, Joy and Eve Pranis. 1990.** ***GrowLab: Activities for Growing Minds.*** **Burlington, VT: National Gardening Association.**

Reflects a new thrust in hands-on science curricula, intended to make science inviting and relevant to students' lives, and to make connections between science and other disciplines. Excellent, thorough, practical, packed with great activities.

• **Coleman, Eliot. 1995.** ***The New Organic Grower: A Master's Manual of Tools and Techniques for the Home and Market Gardener.*** **White River Junction, VT: Chelsea Green Publishing Company.**

Very helpful in terms of planning, site preparation, soil fertility, and planting; of particular interest is the focus on earth stewardship, producing food, and marketing.

• **Dannenmaier, Molly. 1998.** ***A Child's Garden: Enchanting Outdoor Spaces for Children and Parents.*** **New York, NY: Simon & Schuster.**

A full-color guide to help parents create natural spaces in the garden where children can freely play and explore. Includes ideas and instructions for 60 easy-to-complete projects.

■ **Dennee, Joanne with Jack Peduzzi and Julia Hand. 1995.** ***In the Three Sisters Garden.*** **Montpelier, VT: Food Works.**

Designed to help teachers, parents, and community members create a living curriculum for children that integrates the human and ecological roots of their own communities through teachings, stories, ceremonies, and activities related to the Three Sisters—corn, beans, and squash.

■ **Gertley, Jan and Michael Gertley. 1997.** ***The Family Garden: Clever Things to Do In, Around and Under the Garden.*** **New York, NY: Sterling Publishing.**

Includes detailed plans and color photos to help build garden benches and sheds, trellises, bean houses, and creative planter boxes. Also includes a brief guide to gardening basics.

• **Guinness, Bunny. 1996.** ***Creating a Family Garden.*** **New York, NY: Abbeville Press.**

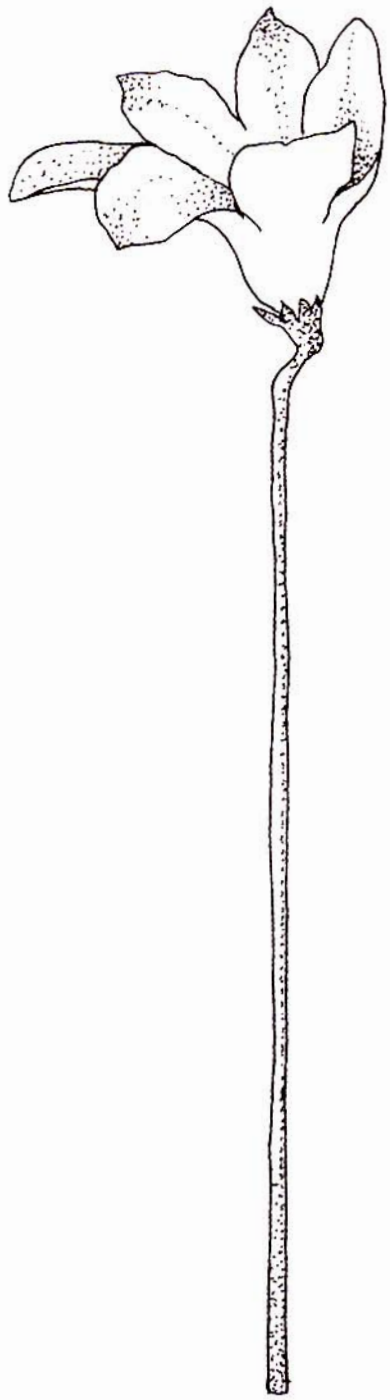
Although this book focuses on residential landscapes, it is included here because it is beautiful, practical, and fanciful, and can provide many terrific ideas with solid "kid appeal." Covers designing and planning, playhouses and treehouses, garden games, and several specific planting schemes and projects.

• **Guy, Linda, Cathy Cromell, and Lucy K. Bradley. 1996.** ***Success with School Gardens: How to Create a Learning Oasis in the Desert.*** **Phoenix, AZ: Arizona Master Gardener Press.**

This book covers all aspects of starting a school garden program, from gaining support, fundraising, and project organization to working with children. A section on growing vegetables, flowers, and herbs in the arid Southwestern climate is included, as is an extensive resource listing.

• **Hart, Roger. 1997.** ***Children's Participation: The Theory and Practice of Involving Young Citizens in Community Development and Environmental Care.*** **London: Earthscan Publications, Ltd.**

For those educators, community leaders, and others who have not worked with children but are concerned with sustainable development, this is an introduction to children's participation and its effectiveness in community-based environmental planning and management.



■ **Herd, Meg. 1997.** ***Learn and Play in the Garden: Games, Crafts and Activities for Children.*** **Hauppage, NY: Barron's.**

Seasonal games, crafts, gardening, and science activities for preschoolers and elementary age children. Projects include making potato prints and simple bird feeders, drying herbs and going on a garden scavenger hunt.

• **Hogan, Kathleen. 1994.** ***Eco-Inquiry: A Guide to Ecological Learning Experiences for the Upper Elementary Grades.*** **Dubuque, IA: Kendall/Hunt.**

Eco-Inquiry provides in-depth learning experiences to help teachers create a collaborative classroom, where students build scientific understandings and awareness of their own growth as inquirers. It contains investigations that build students' understanding of ecological processes in their local environment, with real-world projects and challenges that unfold over time.

• **Hynes, H. Patricia. 1996.** ***A Patch of Eden: America's Inner City Gardeners.*** **White River Junction, VT: Chelsea Green Publishing Company.**

Although not a "school grounds" resource per se, an interesting overview of some very intriguing city gardening projects, and the people, the majority of whom are women, who have made them happen. Many of these gardening projects have arisen out of environments in which some would have anticipated failure. Helpful as an inspiration.

■ **Jaffe, Roberta and Gary Appel. 1990.** ***The Growing Classroom: Garden-Based Science.*** **Menlo Park, CA: Addison Wesley.**

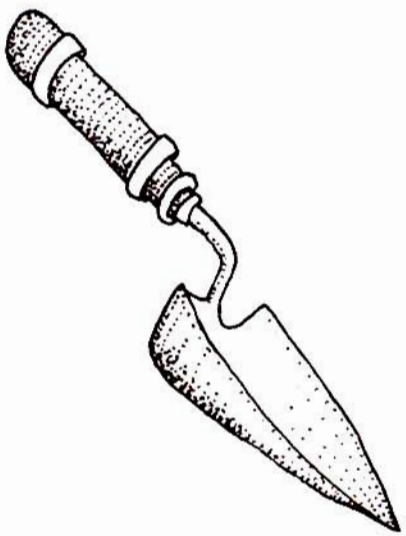
Developed by the LifeLab Science Program, this teacher's manual features strategies for managing garden-based science instruction—including planning a garden laboratory, facilitating investigative lessons on ecology and nutrition, and involving the community.

■ **Jurenka, Nancy A. and Rosanne J. Blass. 1996.** ***Beyond the Bean Seed: Gardening Activities for Grades K-6.*** **Englewood, CO: Teacher Ideas Press.**

This book aims at connecting gardening with literacy and children's literature, and is designed for any adults who work with children, including classroom teachers, horticulturists, arboretum and botanical garden education directors, librarians, garden center teachers, and camp counselors. It provides ideas for using children's books, language arts, and creative activities within a gardening setting.

■ **Jurenka, Nancy A. and Rosanne J. Blass. 1996.** ***Cultivating a Child's Imagination Through Gardening.*** **Englewood, CO: Teacher Ideas Press.**

A companion piece to *Beyond the Bean Seed*, this book provides garden-based experiences and literacy events designed to engage children in authentic relationships with the natural environment, adults, and peers. The activities include creative problem solving, brainstorming, flexible thinking, inventiveness, experiments with and explorations of the natural environment, as well as encouragement to dream and imagine.



■ **Kiefer, Joseph and Martin Kemple. 1998.** ***Digging Deeper: Integrating Youth Gardens Into Schools and Communities.*** **Montpelier, VT: Food Works.**

This how-to guide is designed for teachers, parents, and community workers who are interested in creating children's gardens that are linked to community heritage and food security. Includes photos, case studies of successful children's gardens, curriculum activities, and sample garden designs.

• **Leathers, Robert, & Assoc. rev. ed. 1996.** ***Step By Step: Innovative Strategies for Community-Built Structures.*** **Ithaca, NY: Leathers Associates.**

Leathers Associates wrote this free brochure for clientele interested in community-built projects. The majority of the Leathers projects are playgrounds, but they have worked within other settings, such as museums and zoos. This piece provides an

overview of the process for community volunteer-built projects. Available from Leathers Associates, 99 Eastlake Road, Ithaca, NY 14850.

• **Louv, Richard. 1992. *Childhood's Future*. New York, NY: Anchor Books.**

Louv's purpose in this book is to deeply understand the changing landscape of childhood, and also to explore how, personally and politically, parents and nonparents can weave a new web of support for the American family. Although not a "school grounds reference," contains valuable insights on community building, particularly in the section on "Schools and the Reweaving of Time."

• **Miller, Heather S. 1990. *Children and Gardens: An Annotated Bibliography of Children's Garden Books, 1829 to 1988*. Bronx, NY: Council on Botanical and Horticultural Libraries, New York Botanical Garden.**

A thorough bibliography that serves as a useful starting point for those seeking access to this literature. Includes both nonfiction and fiction.

• **Moore, Robin C. 1993. *Plants for Play: A Plant Selection Guide for Children's Outdoor Environments*. Berkeley, CA: MIG Communications.**

This concise book discusses the many important and creative functions that plants can serve in children's play environments; it is an excellent resource for landscape architects, teachers, parents, and anyone else responsible for plantings in play areas and other landscapes used by children.

• **Moore, Robin C., Susan M. Goltsman, and Daniel S. Incofano (eds.). 2nd ed. 1992. *Play for All Guidelines: Planning, Design and Management of Outdoor Play Settings for All Children*. Berkeley, CA: MIG Communications.**

Developed by a team of 136 professionals, this award-winning book is the industry standard for helping professional designers, park and recreation managers, and community groups make informed decisions about the planning, design, and ongoing management of children's play environments. The most comprehensive design resource available for integrating children of all abilities in the same play area.

• **Nabhan, Gary Paul and Stephen Trimble. 1994. *The Geography of Childhood: Why Children Need Wild Places*. Boston, MA: Beacon Press.**

Focuses on the crisis of children's estrangement from the natural world. An interesting blend of social science, heightened awareness of environmental education, and subjective reflections based largely on the direct experience of the authors.

■ **Parella, Deborah. 1995. *Project Seasons: Hands-on Activities for Discovering the Wonders of the World*. Shelburne, VT: Shelburne Farms.**

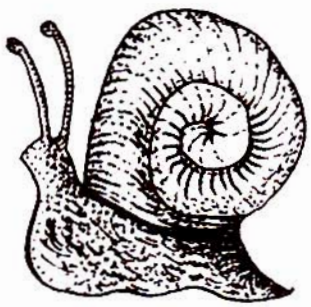
A collection of hands-on activities and teaching ideas for elementary educators that uses the school-year seasons of fall, winter, and spring to integrate science, agriculture, and environmental themes into the curriculum.

■ **Pranis, Eve. *Growing Ideas: A Journal of Garden-Based Learning*. Burlington, VT: National Gardening Association.**

This 12-page newsletter, published three times a year, features gardening highlights from growing classrooms, project ideas from multicultural and butterfly gardens to hydroponics, and teaching strategies for using gardens to help young minds grow.

■ **Pranis, Eve and Jack Hale. 1988. *GrowLab: A Complete Guide to Gardening in the Classroom*. Burlington, VT: National Gardening Association.**

Having a garden in the classroom offers students a chance to explore plant life cycles all year, and provides a hands-on context for teaching a wide variety of basic subject area skills in science, mathematics, social studies, language arts, health, and fine arts. This guide is designed to help teachers in grades K-8 establish and maintain a garden in their classroom.



■ **Rhoades, Diane. 1995.** ***Garden Crafts for Kids: 50 Great Reasons to Get Your Hands Dirty.*** **New York, NY: Sterling Publishing.**

Compelling photographs and detailed activities guide youngsters to become scientists and adventurers as they design and maintain gardens through projects such as soil testing, building scarecrows and trellises, investigating earthworms, and more.

• **Savio, Yvonne (ed.). 3rd ed. 1999.** ***Children's Gardens: A Field Guide for Teachers, Parents and Volunteers.*** **Oakland, CA: University of California. Cooperative Extension Common Ground Garden Program.**

Set up in an easy field-guide format, this book is the manual for the Gardening Angels School Garden Program. Sections on gardening how-to, hands-on activities for each section of the process, additional resources, and a bibliography are rich in information applicable in any garden situation for beginning gardeners of all ages.

• **Stine, Sharon. 1997.** ***Landscapes for Learning: Creating Outdoor Environments for Children and Youth.*** **New York, NY: John Wiley & Sons.**

This book helps designers and teachers think about the quality of outside school environments as learning places, pointing out that rethinking the outside space means considering its potential for rich sensory input, flexible furnishing, and endless possibilities for exploration. The book focuses largely on school environments and includes many very interesting case studies.

• **Sobel, David. 1993.** ***Children's Special Places: Exploring the Role of Forts, Dens, and Bush Houses in Middle Childhood.*** **Tucson, AZ: Zephyr Press.**

After 20 years of research, the author concludes that children's special place experiences have a profound impact on adult community/environmental behaviors, and that such special places help children feel at home in school and their neighborhoods, particularly as they prepare themselves for their transition into adolescence.

• **Tilgner, Linda. 1988.** ***Let's Grow!: 72 Gardening Adventures with Children.*** **Pownal, VT: Storey Communications.**

A lively book with great photos that provides ideas and activities for gardening with children, including very young children and children with special needs.

• **Trautmann, Nancy M. and Marianne E. Krasny. 1997.** ***Composting in the Classroom: Scientific Inquiry for High School Students.*** **Dubuque, IA: Kendall/Hunt.**

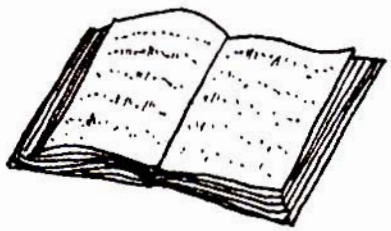
A comprehensive manual for teachers interested in using composting as a topic for scientific inquiry by high school students. Includes an overview of the biology, chemistry, and physics of composting, as well as sample research topics, guidelines for directing student research, and instructions for a wide variety of techniques related to compost science.

• **Wade, Rahima C. 1997.** ***Community Service-Learning: A Guide to Including Service in the Public School Curriculum.*** **Albany, NY: SUNY Press.**

This practical book is a guide to developing projects that incorporate meaningful service and valuable student learning, student empowerment, community collaboration, critical reflection, and enthusiastic celebration of efforts. Helps service-learning practitioners develop projects for public school students, schools, and communities.

■ **Waters, Marjorie. 1994.** ***The Victory Garden Kids' Book: A Fun Guide to Growing Vegetables, Fruits and Flowers.*** **Old Saybrook, CT: Globe Pequot Press.**

Written for kids, this colorful book features an easy-to-understand introduction to planning, planting, maintaining, and harvesting a garden, including advice on 30 easy-to-grow plants.



- **Wisconsin Rural Development Center. 1991. *Toward a Sustainable Agriculture: A Teacher's Guide.* University of Wisconsin-Madison: The Center for Integrated Agricultural Systems.**

This publication is targeted to high school agriculture instructors; the philosophy underpinning the guide is that sustainable principles and practices are applicable to the mainstream of contemporary agriculture. It contains a teacher reference guide, instructional unit, and collection of individual learning activities designed for use with students.

Cornell Cooperative Extension

There are many excellent resources available through Cornell Cooperative Extension; below is a sample. For information about these as well as other resources, contact: Cornell University Resource Center, 7 BTP, Ithaca, NY 14850; Phone: (607) 255-2080; Fax: (607) 255-9946. Web: *www.cce.cornell.edu/publications/catalog.html*

- **Bonhotal, J.F. and M. E. Krasny. 1990. *Composting: Wastes to Resources.* 147CWRF**

A guide for educators leading youth aged 9 to 12 in composting and related activities. Includes an instructional manual, two posters, and 11 designs for composting systems.

- **Cockram, M., D. Rakow, and R. Kline. 1991. *Garden in the City.* 141L78**

Designed for youth and adults with little gardening experience and limited space; this project began in New York City, but the ideas can be used anywhere. Includes information about building a garden box, starting seeds, planning the garden, cleaning the site, breaking ground, planting, weeding, thinning, and harvesting.

- **Eames-Sheavly, Marcia. 1992. *Radishes to Riches: A Produce Marketing Project for Youth.* 142M5**

This guide offers youth and adults the "tools" needed to grow and market vegetables, flowers, and fruit. Reproducible sheets for keeping track of expenses, income, etc., are included. A good project for melding horticulture with communication and business skills.

- **Eames-Sheavly, Marcia. 1993. *The Three Sisters: Exploring an Iroquois Garden.* 142LM15**

Uses an Iroquois gardening method to teach both youth and adults about Native American culture. Explores the foods, customs, and stories that evolved from the planting of corn, beans, and squash—the Three Sisters—to help students understand the cultural values that surround these crops. Describes legends, the need for plant diversity, uses of the Three Sisters, and planting facts. Adults will enjoy reading this as well as utilizing it with youth audiences.

- **Eames-Sheavly, Marcia. 1994. *The Great American Peanut.* 142LM16**

Education and entertainment are integrated with history in this 20-page publication. Encourages students to use their imagination while learning about peanuts and the farmers who have grown them. Special focus on using what is thought of as a "southern" crop in the North.

- **Eames-Sheavly, Marcia and Tracy Farrell. 1995. *The Humble Potato: Underground Gold.* 142LM17**

Entertaining stories and hands-on activities will help children ages 9 to 12 learn about potatoes from the perspectives of science and socioculture. A range of activities covers how to grow potatoes, as well as their nutritional value.

• **Eames-Sheavly, Marcia. 1996. *Rice, Grain of the Ancients*. 142LM18**

Explore rice growing through the letters of an imaginary pen-pal in Northern China. By reading her stories and the stories and poems of others, and by doing the activities, youth will learn more about rice and the people of Southeast Asia. Activities include creative writing, building a rice paddy, cooking, making shadow puppets, and making paper with rice straw.

• **Klass, Carolyn and M. Hoffman. 1992. *Learning About Butterflies*. 139M9**

Questions, and suggested activities and strategies for finding the answers, encourage a lifelong interest in and love for these beautiful small animals. The butterfly life cycle is explained along with habitats, ecology, and behavior. The spectacular color plates show favorite and common species.

Journal Articles

• **Alexander, Jacquelyn et al. 1995. "Master Gardener Classroom Garden Project: An Evaluation of the Benefits to Children." Children's Environments 12(2): 256-263.**

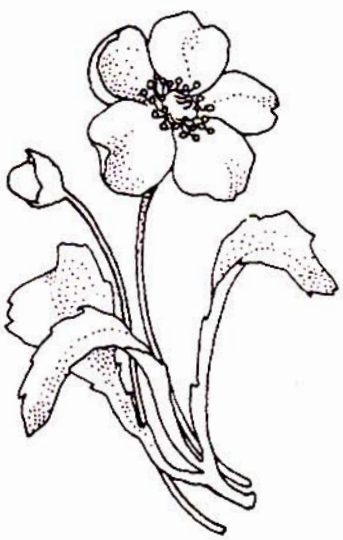
The Master Gardener Classroom Garden Project provides inner-city elementary school children in the San Antonio Independent School District with an experiential way of learning about horticulture, gardening, themselves, and their relationships with their peers. Interviews indicate that participation in the gardening project had many positive effects on the children.

• **Bowles, Beatrice. 1995. "Celebrating Common Ground: Storytelling in Children's Gardens." Children's Environments 12(2): 271-274.**

This article suggests that by linking storytelling with children's garden programs, public gardens may serve to educate children about the processes that underlie and interweave diverse cultures' seasonal traditions.

• **Canaris, Irene. 1995. "Growing Foods for Growing Minds: Integrating Gardening and Nutrition Education into the Total Curriculum." Children's Environments 12(2): 264-270.**

A public school class of 40 children in grades 1-4 at Westminster, Vermont participated in an integrated curriculum encouraging hands-on, inquiry-based learning in a cooperative setting. The activities described here revolved around a snack garden, which expanded to include an awareness of the importance of local foods.



• **Clemens, Jacqueline B. 1996. "Gardening with Children." Young Children 51(4): 22-27.**

This article suggests that involving children in the process of gardening— selecting seeds and plants, planting, tending the garden, and harvesting the crop—helps them understand the natural process of growing plants. Introduces container, square-foot, raised, and conventional gardens. Gives suggestions on what and when to plant, as well as tips on gardening and harvesting.

• **Coffey, Ann. 1996. "Transforming School Grounds." GreenTeacher 47(Apr-May): 7-10.**

Discusses the possibilities and benefits of transforming school grounds into natural spaces for learning as well as for playing. A brief history of campaigns to utilize school grounds, from the 1850s to the 1940s school Victory Gardens to present-day efforts, is also included.

• **Demas, Sam. 1979. "School Gardens and Environmental Education." Nature Study 32(3): 3-5.**

Discusses the use of garden projects to teach environmental concepts. Describes several youth garden programs and home/school garden programs in existence throughout the country.

- **Elliot, Ian. 1994. "Saying It with Flowers (and Wildlife, Too)." Teaching Pre-K-8 25(2): 34-38.**

Describes how a North Carolina elementary school transformed a courtyard into a nature learning center, complete with three-tiered pond, fish, animals, and plants. The project, funded through the collection of aluminum cans, is used for science, archaeology, language arts, and social studies activities.

- **Finlay, Joy. 1991. "Creative Minutes in the School Yard." Nature Study 44(4): 33.**

Eight field trip suggestions for the school grounds with activities to enhance such skills as observing, comparing, describing, drawing conclusions, investigating, mapping, developing vocabulary, sequencing events, inferring, interpreting, and writing for all grades and ages.

- **Francis, Mark. 1995. "Childhood's Garden: Memory and Meaning of Gardens." Children's Environments 12(2): 183-191.**

Probes some of the conceptual meanings people attach to gardens, based on memories and meanings of childhood gardens. The role of gardens in child development and place attachment is suggested.

- **Gwynn, Mary Loleta. 1988. "A Growing Phenomenon." Science and Children 25(7): 25-26.**

Describes the GrowLab program sponsored by the National Gardening Association. Discusses how eight square feet of classroom space are converted into a mini-ecosystem.

- **Heffernan, Maureen. 1994. "The Children's Garden Project at River Farm." Children's Environments 11(3): 221-231.**

A national children's gardening symposium was held August 12-14, 1993, to enable K-8 educators to begin or improve gardening programs for children. Discusses some of the conference results and describes 12 model gardens for both recreational and educational purposes at school, backyard, and community sites.

- **Keetch, Tammy. 1996. "Transforming School Grounds into Natural Learning Environments." Clearing 94 (Aug-Sep): 8-9.**

Discusses the benefits as well as the concerns of changing traditional asphalt and turf grass grounds into educational resources.

- **Knoop, Paul E., Jr. 1996. "A Diverse Dozen: Habitats for Healthy School Grounds." Clearing 94 (Aug-Sep): 10.**

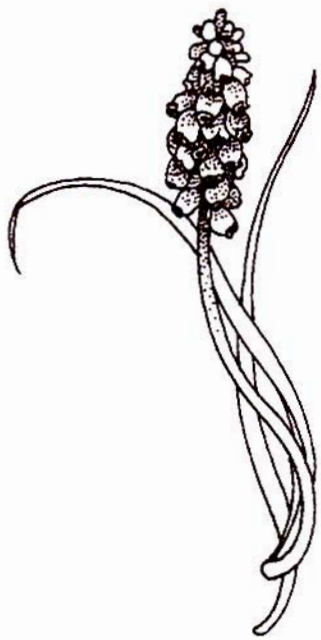
Since few of the original landforms, streams, natural ecosystems, wild plants, or animals still exist in cities and suburbs, this article asserts that schools can help to fill this void by creating diverse learning environments around school buildings. Among the suggestions are a wetland, tall or short grass prairies, a boulder field, vegetable garden plots, feeding stations, and nest boxes.

- **Larson, Jan. 1997. "The Green Pages Environmental Education Activities K-12: Gardens for Young Growing Lives." Clearing 96 (Jan-Feb): 20-24.**

Describes several gardening activities that can be utilized as they are, or as a foundation for more in-depth projects. Activities include setting up an indoor garden spot, making compost, measuring water movement in plants, making herb gardens, and drying herbs. Contains a list of resources.

- **Lucas, Bill. 1995. "Grounds for Change: Learning Through Landscapes in Britain." NAMTA Journal 20(2): 53-57.**

Discusses the role of the Learning Through Landscapes organization in Britain, which emphasizes the importance of suitable school grounds and gardens for the



effective environmental education of children. Also discusses how school grounds can be used in geography, science, mathematics, and physical education instruction.

- **Meyer, Mary H. and Anna F.G. Barker. 1997. "Teaching Horticulture and Native American Agricultural Traditions: An Annotated Bibliography." HortTechnology 7(2): 110-118.**

The authors contend that Native American traditions can provide a wealth of ideas and activities in teaching how plants are an integral part of our lives. The paper compiles resources for teachers that focus on curriculum and horticultural or agricultural resources for grades K-12.

- **Moore, Robin C. 1995. "Children Gardening: First Steps Towards a Sustainable Future." Children's Environments 12(2): 222-232.**

Children's gardening is introduced within the broader frame of reference of sustainable development, regenerative design, and biodesign. Gardening in the primary grades is proposed as one of the most feasible pedagogical approaches for ensuring a daily learning experience that provides contact with nature.

- **Moore, R.C. 1996. "Compact Nature: The Role of Playing and Learning Gardens on Children's Lives." Journal of Therapeutic Horticulture 8: 72-82.**

This article explores the need for children to explore intimately, in an unmediated fashion, their natural environment. Moore suggests that this can take place in "therapeutic landscapes." He discusses the restrictive environment of childhood and its resulting loss of contact with nature, and contends that special landscapes for children can serve as a healthy refuge and sanctuary.

- **Pranis, Eve. 1998. "Growing Wildlife Habitats." Growing Ideas: A Journal of Garden-Based Learning. 9(1): 1-12.**

This issue features stories from classrooms whose students have created butterfly gardens, bird sanctuaries, and other types of wildlife habitats. It includes details on assessing your school site; creating gardens for butterflies and other creatures; and finding resource books, Web sites, and grants for schoolyard habitats.

- **Sandler, Linda et al. 1995. "From Desert to Garden: Reconnecting Disconnected Youth." Educational Leadership 52(8): 14-16.**

Describes a traditional Yaqui garden created by 13 at-risk teens participating in Arizona's innovative Pascua Yaqui Educational Group Effort, combining basic skills and pre-employment skills instruction. Participants are from an Indian reservation, nearly one-third of whose students drop out of Tucson high schools yearly. Students' attitudes toward their communities have improved markedly.

Appendix C: Resources

Funding Sources

America the Beautiful Fund
Operation Green Plant
1730 K St. NW, Ste. 1002
Washington, D.C. 20006
(202) 638-1649
www.america-the-beautiful.org

Distributes free seeds to communities, organizations and educational programs.

American Honda Foundation
PO Box 2205, Torrance, CA 90509
(310) 781-4090

Awards grants ranging from $10,000 to $50,000 to national nonprofit agencies for youth education programs in math, science, the environment, and technology.

Captain Planet Foundation
1 CNN Center 6 North
Atlanta, GA 30303
(800) 877-KIDPOWER
www.turner.com/cpf

Funds projects that promote understanding of environmental issues, focuses on hands-on involvement, and involves children and young adults (K-12). Grants awarded range from $250 to $2500.

The Chronicle of Philanthropy
1255 23rd St. NW
Washington, DC 20037
(800) 728-2819 • *www.philanthropy.com/*

A biweekly newspaper (print and online) for charity leaders, fundraisers, grant makers and others involved in the philanthropic enterprise.

Environmental Protection Agency
Environmental Education Grants
Office of Environmental
Education (1704)
401 M St. SW, Washington, DC 20460
(202) 260-8619
www.epa.gov/enviroed/grants.html

Web site lists grant programs that support environmental education projects, and also has a useful grant-writing tutorial. Grants under $25,000 are administered through regional offices.

Foundations On-Line
www.foundations.org

An extensive Web directory of charitable grant makers.

In addition, contact your local:

- Chamber of Commerce
- Community Businesses
- Parent/Teacher Organizations
- Garden Clubs
- Garden Centers and Nurseries
- Horticultural Commercial Organizations
- Lions, Kiwanis, and other civic organizations
- Cooperative Extension Service
- Foundations

General Mills Corporation
Boxtops for Education Program
717 Faxon Rd.
Young America, MN 55397
(888) 799-2444
www.boxtops4education.com

Elementary schools can earn up to $10,000 by collecting box tops in this fundraising program.

General Mills Foundation Grants
PO Box 1113, Minneapolis, MN 55440
(612) 540-2211
www.generalmills.com/explore/community

Supports programs that emphasize student achievement, literacy, job training, efficiently using existing resources, early childhood development, and other areas. Grant levels vary from $1000 to $100,000.

Hasbro Children's Foundation
32 West 23rd St, New York, NY 10010
(212) 645-2400

Supports programs for disadvantaged youth up to age 12, their families, and communities, in the areas of health, education, and societal needs.

Human-i-tees Fundraisers
400 Columbus Ave., Valhalla, NY 10595
(800) 983-2784 • *www.humanitees.com*

An environmental fundraising company offering T-shirts, mugs, and other products for resale to raise money for garden projects.

Lily Ponds for Youth Grant Program
Lilypons Water Gardens
PO Box 10, Buckeystown, MD 21717
(301) 874-5503 x10

Awards matching grants of up to $1000 to five schools yearly for water gardens.

National Gardening Association
Youth Garden Grants
180 Flynn Ave., Burlington, VT 05401
(800) 538-7476 • *www.garden.org/edu*

Awards of tools, seeds and garden products valued at more than $750 to help initiate or sustain a gardening program. See inside back cover for more details.

National Tree Trust
Growing Together Program
Partnership Enhancement Program
1120 G St. NW, Ste 770
Washington, DC 20005
(800)846-8733 • *www.nationaltreetrust.org*

Programs, grants, and information on tree planting to introduce children and adults to the benefits of trees.

National Wildlife Federation
Wild Seed Funds
8925 Leesburg Pike
Vienna, VA 22184-0001
(703) 790-4434 • *www.nwf.org/habitats*

Grants of $250 awarded for schoolyard habitat projects. See next section for their educational programs.

Toyota Tapestry Grants for Teachers
c/o National Science Teachers Assoc.
1840 Wilson Blvd., Arlington, VA 22201
(703) 243-7100 • *www.nsta.org*

Awards grants of up to $10,000 each for innovative science projects at the middle and high school levels.

Organizations and Educational Resources

Acorn Naturalists
17300 E 17th St., Ste. J-236
Tustin, CA 92680
(800) 422-8886 • *www.acornnaturalists.com*

Catalog of science and environmental education materials for educators, naturalists, interpreters, and camp leaders.

Ag in the Classroom
U.S. Department of Agriculture
Room 3534-South
1400 Independence Ave. SW
Washington, DC 20250-2251
(202) 720-7925
www.reusda.gov/serd/hep/agclass.htm

An initiative to provide information about the role of agriculture in society to K-8 students and teachers. Sponsors national conference and supports programs in all states and Canadian provinces. Web site has many useful resources.

American Community Gardening Association
100 N 20th St., 5th Floor
Philadelphia, PA 19103-8810
(215) 988-8845 • *www.communitygarden.org*

National networking organization promoting community greening efforts from gardens to parks. Bimonthly newsletter, national and regional conferences, and many other resources.

American Horticultural Society
7931 E Boulevard Dr.
Alexandria, VA 22308
(703) 768-5700 • *www.ahs.org*

Sponsors a yearly Youth Gardening Symposium in rotating locations around the country. Web site includes extensive list of links to youth gardening resources.

American Horticultural Therapy Association
909 York St., Denver, CO 80206
(301) 948-3010 • *www.ahta.org*

Provides program and technical information through publications, regional events, and national conferences.

Carolina Biological Supply Company
2700 York Rd., Burlington, NC 27215
(800) 334-5551 • *www.carolina.com*

Catalog of agriscience and other supplies, including Wisconsin Fast Plants seeds and kits.

Cornell University
Fruit & Vegetable Science Dept.
134-A Plant Science Bldg.
Ithaca, NY 14853
(607) 255-1781
www.fvs.cornell.edu/gardening/index.html

Resources for horticulture education for youth and adults.

Food Works
64 Main St., Montpelier, VT 05602
(802) 223-1515

The Common Roots Program at Food Works offers courses, workshops, and guidebooks for developing community-based curriculum that focuses on local natural and cultural heritage.

Gardener's Supply Company
128 Intervale Rd., Burlington, VT 05401
(800) 863-1700 • *www.gardeners.com*

Catalog of indoor and outdoor gardening products.

Gardens for Growing People
PO Box 630, Point Reyes, CA 94956
(415) 663-9433 • *www.svn.net/growpepl*

Catalog of resources for garden-based education, including heirloom seed collections.

The Green Brick Road
429 Danforth Ave., Ste. 408
Toronto, Ontario, Canada M4K 1P1
(800) 473-3638 • *www.gbr.org*

North American importer for the British "Learning Through Landscapes," an organization that focuses on all aspects of school grounds.

Green Teacher
95 Robert St.
Toronto, Ontario, Canada M5S 2K5
PO Box 1431, Lewiston, NY 14092
(416) 960-1244 • *www.web.ca/~greentea*

A quarterly magazine by and for educators to enhance environmental and global education across the curriculum at all grade levels. Web site includes many useful resources.

Let's Get Growing
1900 Commercial Way
Santa Cruz, CA 95065
(800) 408-1868 • *www.letsgetgrowing.com*

Extensive catalog of environmental and nature education products for K-12.

LifeLab Science Program
1156 High St., Santa Cruz, CA 95064
(408) 459-2001 • *www.lifelab.org*

A hands-on science curriculum with a "Living Laboratory" approach to elementary science education.

National 4-H Council
7100 Connecticut Ave.
Chevy Chase, MD 20815
(301) 961-2840 • *www.fourhcouncil.edu*

In partnership with state cooperative extension systems, provides youth leadership and development in community settings. Many resources available, including a 4-H horticulture curriculum.

National FFA
6060 FFA Dr., PO Box 68960
Indianapolis, IN 46268-0960
(317) 802-6060 • *www.ffa.org*

Promotes agricultural education in the schools through scholarship programs, opportunities for community service projects, career development and leadership training, and more.

National Gardening Association
180 Flynn Ave., Burlington, VT 05401
(800) 538-7476 • *www.garden.org/edu*

Promotes youth gardening through many venues, including the GrowLab K-8 Science program, Growing Ideas newsletter, Teaching Tools catalog, Youth Garden Grants program, Kids and Classrooms Web site, and more.

National Wildlife Federation
Schoolyard Habitats Program
8925 Leesburg Pike
Vienna, VA 22184-0001
(703) 790-4434 • *www.nwf.org/habitats*

Resources to create habitat-based learning sites in the schoolyard. Sponsors International Schoolyard Day, conferences, and workshops. Web site includes extensive resource listings and an online forum. Also awards Wild Seed Funds for habitat creation through regional offices.

People-Plant Council
Virginia Polytechnic Institute
Office of Environmental Horticulture
407 Saunders Hall
Blacksburg, VA 24061-0327
(540) 231-6254
www.hort.vt.edu/human/PPC.html

Research on the effects of plants on human well-being and improved life quality. Quarterly newsletter and informative Web site.

E-mail Listserves

Community Gardening
www.mallorn.com/lists/community_garden/

School Gardening
To subscribe, send an e-mail message to: *majordomo@ag.arizona.edu*
In the body of the message, type:
subscribe school_garden